

Appl. No. **10 511 394**

Amdt. dated January 17, 2006

Reply to Office action mailed September 14, 2006

## **REMARKS/ARGUMENTS**

Claim 9 has been amended to further clarify that (C) is a styrenic graft copolymer of styrenic monomer. Dependent claims 13-19 have been amended for consistency with the independent claim. Support for these amendments is found in paragraphs 0031 to 0033 of the published application. Component (D) in claims 9 and 22 has been amended to recite that the phosphorous-containing compound in the thermoplastic flame retardant resin composition consists essentially of an aromatic phosphoric acid ester compound. Support for the claims is found in the examples in the specification. Inorganic phosphorous compounds such as the red phosphorous used in Ohzeki change the color of the resulting resin to red. Red phosphorous is also known to release toxic phosphine during processing or combustion.

Claims 24 and 25 directed to specific embodiments of the invention have been added. Support for the claims is found in paragraph 0037 and the examples in the published application. No new matter has been added.

## **Status of the Claims**

Claims 1-24 are pending and under consideration. Claims 24 and 25 are added by this Amendment.

## **Statement of the Rejections**

Claims 9 - 23 stand rejected under 35 U.S.C. §112, second paragraph as being indefinite. The Examiner has taken the position that "the difference between a rubber modified polystyrene resin and a rubber modified polystyrene copolymer would not be apparent to one skilled in the art".

Claims 9 - 13, 15, 16, and 18 - 23 stand rejected under 35 U.S.C. §102(b) as anticipated by Ohzeki. The reference discloses compositions comprising polyphenylene ether resin, a rubber-modified resin comprising an elastomeric rubber having grafted thereto acrylonitrile and vinyl aromatic compound units, optionally a polystyrene resin, red phosphorous, and a phosphoric acid

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ester. The Examiner has taken the position that the compositions of claims 9 - 13, 15, 16, and 18 - 23 are disclosed in the reference

Claims 9 - 23 stand rejected under 35 U.S.C. §103(a) as unpatentable over Ohzeki in view of Trementozzi. Ohzeki is relied upon for the compositions noted previously which contain acrylonitrile units. Trementozzi disclose polyphenylene oxide blended with SAN or ABS polymer containing 2 to 8 % by weight acrylonitrile. The reference discloses the use of methacrylonitrile in place of acrylonitrile. The Examiner has taken the position that it would have been obvious to one skilled in the art to substitute methacrylonitrile for acrylonitrile in Ohzeki in view of the teaching of Trementozzi.

#### **Applicants' Traversal**

Applicants traverse the rejections and respectfully request reconsideration in view of the following discussion.

#### **Claims 9 - 24 are not anticipated by Ohezki because the reference requires red phosphorous which is not an aromatic phosphoric acid ester**

The transitional phrase "consisting essentially of" limits the scope of a claim to the specified materials or steps "and those that do not materially affect the basic and novel characteristic(s)" of the claimed invention. *In re Herz*, 537 F.2d 549,551-52, 190 USPQ 461,463 (CCPA 1976).

Claims 9 and 22 have been amended to recite that the phosphorous-containing compound in the composition consists essentially of an aromatic phosphoric acid ester compound. As discussed in paragraphs 003 - 005 of the published application, flame retardants which produce toxic gases are a major concern in the field of resin compositions containing flame retardants. It is well known that the purpose of using phosphoric acid ester compounds in resin compositions is to provide good flame retardance without the danger of toxic gases being released during processing or combustion. The compositions of the present invention also have good appearance and gloss. The use of red phosphorous imparts a red color to a composition which, if not desired,

must be covered by a plating process such as that disclosed by Ohzeki or by a painting process to provide good appearance and gloss.

Applicants submit that the phrase “consisting essentially of” excludes the red phosphorous flame retardant required by Ohzeki. The phrase “consists of” in claim 24 specifically excludes any phosphorous-containing compound other than an aromatic phosphoric acid ester compound. Therefore, Applicants submit that claims 9 - 24 are not anticipated by Ohzeki.

**Claim 25 is not anticipated by Ohezki because the particle size range is less than the particle size specified in the reference**

Claim 25 is directed to an embodiment of the invention in which the average particle of the rubber of Component (C) is from 0.1 to 0.4  $\mu\text{m}$ . Ohezki does not disclose any range of average particle size for the rubber. In the examples, Ohezki used “polybutadiene latex having a weight average particle diameter of 4500 Å which is outside the range of claim 25.

**The present claims are not prima facie case of obvious over Oheki in view of Trementozzi**

When applying 35 U.S.C. 103, the following tenets of patent law must be adhered to:

- (A) The claimed invention must be considered as a whole;
- (B) The references must be considered as a whole and must suggest the desirability and thus the obviousness of making the combination;
- (C) The references must be viewed without the benefit of impermissible hindsight vision afforded by the claimed invention; and
- (D) Reasonable expectation of success is the standard with which obviousness is determined.

MPEP §2143 states the basic requirements of a *prima facie* case of obviousness citing supporting case law:

1. There must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one skilled in the art to modify the references or combine reference teachings. (see MPEP §2143.01)

2. There must be a reasonable expectation of success. (see MPEP §2143.02)
3. The prior art reference (or references when combined) must teach or suggest all of the claim limitations. (see MPEP §2143.03)

**There is no motivation or suggestion in Ohzeki to exclude red phosphorous since the reference teaches that at least 1 part by weight of red phosphorous in its compositions**

Claims 9 and 22 have been amended to recite that component (D) is a phosphorous-containing compound wherein the phosphorous-containing compound in the thermoplastic flame retardant resin composition consists essentially of an aromatic phosphoric acid ester compound. Claim 24 provides that the phosphorous-containing compound consists of an aromatic phosphoric acid ester compound.

Ohzeki requires red phosphorous in an amount from 1 to 4 parts by weight (col. 9, lines 57-58). The examples therein show that the use of 0.8 parts of red phosphorous results in poor flame retardance in the compositions of Ohzeki (col. 30, lines 64-67). Applicants submit that one skilled in the art would not exclude red phosphorous from the compositions of Ohzeki since the reference teaches and exemplifies inferior results when an amount less than 1 part by weight is used thus teaching away from Applicants' claimed compositions.

Claim 25 recites the range of the average particle size of the rubber of component (C) which is preferred for good impact strength and appearance (paragraph 0037 of the published application). Ohzeki does not generally disclose any ranges for particle size of the rubbers used therein. In the examples, a rubber having a weight average particle diameter of 4500 Å is disclosed which is outside the claimed range. "[A] particular parameter must first be recognized as a recognized variable, i.e., a variable which achieves a recognized result, before the determination of the optimum or workable ranges of said variable might be recognized as routine experimentation" (MPEP 2144.05, section II, citing supporting case law). Since Ohzeki et al. does not recognize any effect of the particle size of the rubber, Applicants submit that one skilled in the art would not be motivated to use particle sizes within the range recited in claim 25.

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**Ohzeki does not provide a sufficient basis for a reasonable expectation of success because red phosphorous is required in the compositions disclosed therein.**

As noted previously, Ohzeki requires red phosphorous in an amount from 1 to 4 parts by weight (col. 9, lines 57-58). The examples therein show that the use of 0.8 parts of red phosphorous results in poor flame retardance in the compositions of Ohzeki (col. 30, lines 64-67). Applicants submit that Ohzeki teaches away from amounts less than 1 part by weight thereby essentially teaching that there is no reasonable expectation of success if red phosphorous is omitted from its compositions.

Since Ohzeki does not recognize the particle size of the rubber as a variable which achieves a recognized result, the reference does not provide sufficient basis for a reasonable likelihood of success in using the rubber having the particle sizes of claim 25 which are less than the particle size disclosed in the examples of Ohzeki.

Applicants submit that a review of the prior art of record as a whole shows that the claims in the present application meet the requirements for patentability. It is respectfully requested that the Examiner reconsider his rejections of the claims and allow claims 9 to 24.

Respectfully submitted,

AHN ET AL

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